Technology helps preserve Native American culture

Training sponsored by BPA and other federal agencies is helping the Northwest better preserve its cultural sites along the Columbia River. The first class of 40 preservation workers went to the field last November in central Washington to put their new combined skills to the test. Photos by Hope Pennell

In order to protect cultural resource sites and preserve our nation's heritage, federal agencies must first find the cultural features. But how do you locate such features in an area that is constantly changing?

Changing – not over long spans of time such as centuries or even decades. But changing once to several times each year. That's the challenge that faces the federal river operating agencies and 13 Columbia River Basin tribes.

Many cultural sites used by Native Americans of this region are located on the Columbia River's banks. And most of the original banks are now under water during much of the year. The fluctuating reservoir levels add to erosion and often change the banks. Each year they expose important cultural sites at the reservoirs.

The need to protect these sites from vandalism is most critical when operators draw down the reservoirs. The best way to protect them is to locate the sites before they are exposed. Once officials know about a site, they can monitor it and take other steps to protect it.

Three women from the Spokane Tribe of Indians Culture Program map coordinates of a field test site: (From left) Cindy Abrahamson, Leona Stanger and Kathryn Arneson.

That's where a blend of the very old with the very new has led to an important new effort. Traditional knowledge, passed down over time, and modern science are working together to locate cultural sites along the Columbia and some of its tributaries. The aim is to identify such sites before river operations expose them, and before looters can steal artifacts and damage or destroy the sites.

Last November, 40 people who work in cultural resource protection took part in the first of four workshops on cultural technology. They belong to one or more of 14 reservoir groups in the Federal Columbia River Power System (FCRPS). Each group has people from the government agencies and from the tribes located near the respective reservoir.

BPA and the tribes sponsored the workshops. Tribal experts and others shared their knowledge of the latest technology people can use to locate sites. The two-day program focused on hands-on work with instruments that use the Global Positioning System (GPS) and Geographic Information System (GIS).

GPS is a satellite-based system that can pinpoint ground locations to within a yard. GIS is a computer system that can create detailed maps of sites.

The workshop took place at the Hanford Nuclear Reservation in central Washington. The Confederated Tribes of the Umatilla Indian Reservation (CTUIR) set up a model cultural site in the field. The workshop used the Washington State University lab at Hanford for its computer work.

Three CTUIR members and Chad Minteer of Electronic Data Solutions demonstrated how to find the best time and day for satellite reception. Shawn Steinmetz, Jeff Van Pelt and Julie Longenecker showed how to use the Internet to get accurate GPS readings.

The group then worked in the field at the model site. Participants used GPS receivers and other equipment to create digital maps. They plotted features of the site and then transferred the data to their computers at the lab.

Consultants from SkyDog Records of Polson, Mont., led a session on the use of video, audio and still photos to document sites. Chris Sanchez and Shikota Sanchez also talked about the need for equipment compatibility and sales support.

Two staff members from the Confederated Salish and Kootenai Tribes led the last session. Dave Schwab and Tim Ryan work in the tribal preservation program. They showed how to integrate GPS data from the field with 3-D digital maps of the larger area and how to link data, photos and video to the computer image.

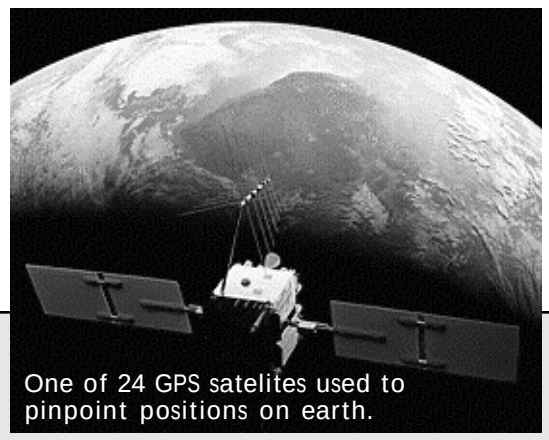
Even with all of the high tech equipment, folks had trouble with some of the programs and data. That reassured them that people are still a vital part of the effort to locate and preserve our cultural sites and resources.

People from the Department of Energy at Hanford and WSU helped BPA and the tribes plan the first workshop. The groups developed a program specific to the land, culture and conditions of the Columbia River. Following the first workshop, the group scheduled an extra session for the end of March to focus more on GPS technology.

The second workshop of the series will take place this spring. The last two workshops will be held this fall and in the spring of 2001. ◀

Hope Pennell is a Corporate environmental specialist in Spokane.

Bob Shank is a Corporate tribal liaison in Spokane.



One of 24 GPS satelites used to pinpoint positions on earth.

Agencies improve cultural efforts

BPA, the U.S. Army Corps of Engineers and the Bureau of Reclamation operate the dams of the Federal Columbia River Power System for many benefits. They also comply with federal laws to protect or help fish and wildlife. And they have other legal obligations as well, although those are less well known or visible.

The agencies must help protect historic and cultural resources. Three laws that apply are the National Historic Preservation Act, the Native American Graves and Repatriation Act and the Archaeological Resource Protection Act.

The three agencies have set up cooperating groups for each of the 14 major reservoirs in the Columbia Basin. Each group has archaeologists, anthropologists or cultural resource technicians from the tribes and agencies. Each group focuses on its respective reservoir area.

Group members work together to identify, record and protect cultural sites. Each reservoir area has some specific and different features that set it apart from the others.

In the summer of 1999, the groups across the system met to review and compare notes on their technical work experiences over the past years. They all now use high tech equipment in their work. But they have different equipment and use different techniques. They agreed that they could learn a lot from each other.

So the system-wide group named BPA's Hope Pennell of Spokane to chair a committee. BPA and the tribes took the lead to plan a series of workshops. Each workshop would use staff from the reservoir groups who have specific expertise. And those people would share their experiences and teach the techniques they use to others.

The program focus is to bring the knowledge of historic cultures and new scientific technology together. The reservoir groups will use both to locate cultural sites so they can then monitor and protect them. Especially before they might be damaged by erosion or vandals.

Pennell says that a major challenge for cultural preservation is to leave research sites visibly untouched. Unfortunately, marked-off sites become targets for a few people who would loot or vandalize them. That's why Pennell likes the high-tech approach for the open spaces.

"The nice thing about recording a site with GPS and GIS is that it's incredibly accurate and completely invisible," Pennell says. "Someone would need access to the computer database to know where a site is."

Of course, the cultural resource folks have the data and know the sites. So they can monitor them and take steps to protect them if they appear to be threatened by a public disturbance or the drawdown of a reservoir. ◀